

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (Currently Amended): A method of measuring the throughput of a network, comprising:

(a) transmitting a block of data over the network, wherein the size of the block of data is selected to fill a network packet;

(b) measuring a value representative of the transmit time of the block;

(c) computing the data transmission rate of the block;

(d) repeating steps a), b) and c) until a stop event occurs, wherein the stop event is the first to occur of transmitting a number of blocks or the passage of an amount of time;

(e) computing the network throughput by averaging the data transmission rates of selected ones of the blocks, wherein the selected ones of the blocks consist of:

all of the blocks for which the data transmission rate was computed during the measurement when the network is known to be a bursty network; and

only those blocks for which the data rate was computed to be less than a prescribed amount from the average data transmission rates of all the blocks transmitted during the measurement when the network is known to be a non-bursty network;

and

(f) outputting the computed network throughput.

Claims 2 - 4 (Cancelled).

Claim 5 (Previously Presented): The method of claim 1 wherein the size of a block of data is selected to cause the application layer of a computer connected to the network to pass a message containing the block to the network without buffering delay.

Claim 6 (Original): The method of claim 5 wherein the transmit time is measured at the application programming layer of a computer connected to the network.

Claim 7 (Original): The method of claim 1 wherein transmitting a block of data comprises generating a message from an application program running on an operating system that establishes a socket having a buffer and the method additionally comprises setting the size of the socket buffer.

Claim 8 (Original): The method of claim 1 wherein the size of a block of data is less than 2 kilobytes.

Claim 9 (Original): The method of claim 1 wherein the throughput is measured in the upstream throughput and the method additionally comprises measuring the downstream throughput.

Claim 10 (Currently Amended): A method of measuring the throughput of a network, comprising:

- (a) establishing a connection between a user computer and a server;
- (b) presenting, with the server, a diagnostic web page to the user;
- (c) repetitively transmitting blocks of data over the network between the user computer and the server until a stop event occurs, wherein the stop event is the first to occur of transmitting a number of blocks or the passage of an amount of time and the size of each block of data is selected to fill a network packet;
- (d) measuring a value representative of the transmit time of the each block;
- (e) computing the network throughput by averaging the data transmission rates of selected ones of the blocks, wherein the selected ones of the blocks consist of:
 - all of the blocks for which the data transmission rate was measured when
 - the network is known to be a bursty network; and

only those blocks for which the data rate was measured to be less than a prescribed amount from the average data transmission rates of all the blocks transmitted during the measurement when the network is known to be a non-bursty network;

and

(f) outputting the computed network throughput.

Claim 11 (Original): The method of claim 10 wherein the web page is presented to the user as an HTML page that contains a script that causes the user computer to transmit blocks of data to the server.

Claim 12 (Original): The method of claim 11 wherein the network is an ADSL network and the computed throughput represents the upstream throughput.

Claim 13 (Original): The method of claim 12 wherein the downstream throughput is separately measured.

Claim 14 (Original): The method of claim 11 wherein the HTML page additionally contains a test payload that is transmitted in the blocks of data.

Claim 15 (Previously Presented): The method of claim 10 wherein:
transmitting a block of data comprises transmitting a block from the server to the user computer; and
the value representative of transmit time is derived from the time between successive acknowledgements from the user computer.

Claim 16 (Original): The method of claim 10 wherein the server is a diagnostic unit installed in the network.

Claim 17 (Previously Presented): The method of claim 10 additionally comprising:

- (a) receiving a call from the network user at a call center operated by the network operator;
- (b) directing the user to access the diagnostic web page and receiving the result;
- (c) receiving, for use at the call center, the computed network throughput.

Claim 18 (Original): The method of claim 10 wherein the passage of time is less than 10 seconds.

Claim 19 (Previously Presented): The method of claim 10 additionally comprising providing the computed throughput to a call center for an internet service provider.

Claim 20 (Cancelled).

Claim 21 (Currently Amended): A network configured for measuring throughput experienced by a user in the access portion of a network, the network comprising a diagnostic unit connected to the network, the diagnostic unit:

- (a) presenting a diagnostic web page to a user computer when the user accesses the diagnostic unit;
- (b) controlling the repetitive transmission of blocks of data over the access network between the user computer and the diagnostic unit, wherein the size of each block of data is selected to fill a network packet;
- (c) measuring a value representative of the transmit time of the block;
- (d) computing the network throughput by averaging the data transmission rates of selected ones of the blocks received before a stop event occurs, wherein the stop event is the first to occur of transmitting a number of blocks or the passage of an amount of time, wherein the selected ones of the blocks consist of:

all of the blocks for which the data transmission rate was measured when the network is known to be a bursty network; and

only those blocks for which the data rate was measured to be less than a prescribed amount from the average data transmission rates of all the blocks transmitted during the measurement when the network is known to be a non-bursty network;

and

(e) outputting the computed network throughput.

Claim 22 (Previously Presented): The network of claim 21 wherein the diagnostic unit measures throughput in the upstream and downstream directions.

Claim 23 (Previously Presented): The network of claim 22 wherein the diagnostic unit measures downstream throughput by transmitting blocks of data to the user computer and measures a value representative of time by measuring the time difference between acknowledgement messages sent by the user computer.

Claim 24 (Previously Presented): The network of claim 23 wherein the diagnostic unit measures upstream throughput by embedding code within the web page when presented to the user computer, and that code causes the user computer to send successive blocks of data to the diagnostic unit.

Claim 25 (Previously Presented): The network of claim 21 wherein the diagnostic unit operates under the control of an application program running on an operating system and the operating system enables communication over the network between the application program and the user computer by establishing a socket that has a buffer that is larger than the size of each block of data and the application program additionally comprises programming that sets the size of the socket buffer.

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Claim 26 (Original): The network of claim 25 wherein the size of the socket buffer is set to between 2 Kbytes and 16 Kbytes.

Claim 27 (Original): The network of claim 26 wherein the size of the socket buffer is set to between 8 Kbytes and 12 Kbytes.